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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/533,329  
Filing Date: May 02, 2005  
Appellant(s): MCCORMICK ET AL.

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Douglas Farrow  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed August 25, 2010 appealing from the Office action mailed December 30, 2009.

**(1) Real Party in Interest**

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

Rejected: Claims 1 and 2.

**(4) Status of Amendments After Final**

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

**(5) Summary of Claimed Subject Matter**

The examiner has no comment on the summary of claimed subject matter contained in the brief.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

### **(7) Claims Appendix**

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

### **(8) Evidence Relied Upon**

4789100	Senf	12-1988
6161723	Cline et al	12-2000
4547128	Hayes	10-1985
4878601	Flemming et al	11-1989

### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C 103(a) as being unpatentable over Senf (4789100 ) in view of Cline et al (6161723).

In re claim 1, Senf discloses a multiple fluid pumping system including:

- A proportioner in figure 4, for dispensing plural component materials (18,20), proportioner comprising: A variable speed electric motor (70) having a shaft and first and second ends ; shaft extending from each ends (as clearly shown in figure 4 the motor and gear box system constitute a variable speed system and

two shafts extend in both direction leading to pumps 54 and 64) ;a first reciprocating pump (54) attached to first motor end , pump (54) being connected to a source of a first material (18) and having an output (60) which has a first pressure; a second reciprocating pump (64) attached to second motor end , pump (64) being connected to a source of a second material (20) and having an output (66) which has a second pressure, pumps (54,64) simultaneously pumping materials to an applicator (50) without passing through another pump ,first and second pumps (54,64) being the only pumps between material sources (18,20) and outputs (60,66), a user-selectable pressure set point (column 4,lines 36-41). Senf however fails to disclose the following limitation which is taught by Cline et al:

- A controller (14) with provision for a user-selectable (using item 20) pressure set point (column 17,lines 30-34), controller (14) continually comparing first and second pressures and regulating the higher of pressures to set point (step 514 of figure 28) ,in figures 1, 28 and column 17,lines 31-33.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the proportional mixing means of Senf by including a controller with user selectable pressure set point as taught by Chine et al in order to allow precise and automated pump pressure control.

In re claim 2, Senf in view of Cline et al disclose the claimed invention:

Hayes discloses:

- A proportioner in figure 4,for dispensing plural component materials (18,20),

proportioner comprising: A variable speed electric motor (70) having a shaft and first and second ends ; shaft extending from each ends (as clearly shown in figure 4 the motor and gear box system constitute a variable speed system and two shafts extend in both direction leading to pumps 54 and 64) ;a first reciprocating pump (54) attached to first motor end , pump (54) being connected to a source of a first material (18) and having an output (60) which has a first positive pressure; a second reciprocating pump (64) attached to second motor end , pump (64) being connected to a source of a second material (20) and having an output (66) which has a second positive pressure, pumps (54,64) simultaneously pumping materials to an applicator (50) without passing through another pump ,first and second pumps (54,64) being the only pumps between material sources (18,20) and outputs (60,66), a user-selectable pressure set point (column 4,lines 36-41).

Cline et al disclose:

- Pumps (34,36) simultaneously pumping materials to an applicator (53) without passing through another pump ,in figure 1 ,a controller (14) with provision for a user-selectable (using item 20) pressure set point (column 17,lines 30-34), controller (14) continually comparing first and second pressures and providing an alarm in the event one of pressures falls to a predetermined percentage of set point, in figures 1, 28 and column 17,lines 31-33 and column 18 lines 5-7.

***Alternate Claim Rejections - 35 USC § 103***

Claims 1 and 2 are rejected under 35 U.S.C 103(a) as being unpatentable over Hayes (4547128 ) in view of Flemming et al (4878601) further in view of Cline et al.

In re claim 1, Hayes discloses a proportional mixing means including:

- A proportioner (11) in figure 1,for dispensing plural component materials, proportioner (11) comprising: A variable speed electric motor (41) having a shaft (43 and 45) and first and second ends ; shaft (43 and 45 )extending from each of ends ;a first pump (21) attached to first motor end (using shaft 43), pump being connected to a source of a first material (13) and having an output (39) which has a first pressure; a second pump (23) attached to second motor end (using shaft 45) , pump being connected to a source of a second material (15) and having an output (49) which has a second pressure, first and second pumps (21 and 23) being the only pumps between material sources and outputs. But Hayes fails to disclose the following limitation which is taught by Flemming et al:
  - Reciprocating piston pump (90), in figure 5. Hayes in view of Flemming et al,however fails to disclose the following limitation which is taught by Cline et al:
  - Pumps (34,36) simultaneously pumping materials to an applicator (53) without passing through another pump ,in figure 1 ,a controller (14) with provision for a user-selectable (using item 20) pressure set point (column 17,lines 30-34), controller (14) continually comparing first and second pressures and regulating

the higher of pressures to set point (step 514 of figure 28) ,in figures 1, 28 and column 17,lines 31-33.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the proportional mixing means of Hayes by selecting a reciprocating pump as taught by Flemming et al for low cost operation (by the design choice of piston pump ).And It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the modified proportional mixing means of Hayes and Flemming et al by pumping materials simultaneously as taught by Cline et al in order to efficiently control the fluid mixing operation and increase the efficiency (because of reduced pumping time).Also using a controller and user selectable pressure set point as taught by Chine et al will allow precise pump pressure control.

In re claim 2, Hayes in view of Flemming et al further in view of Cline et al discloses the claimed invention:

Hayes discloses:

- A proportioner (11) in figure 1,for dispensing plural component materials, proportioner (11) comprising: A variable speed electric motor (41) having a shaft (43 and 45) and first and second ends ; shaft (43 and 45 )extending from each of ends ;a first pump (21) attached to first motor end (using shaft 43), pump being connected to a source of a first material (13) and having an output (39) which has a first positive pressure; a second pump (23) attached to second motor end (using shaft 45) , pump being connected to a source of a



second material (15) and having an output (49) which has a second positive pressure.

Flemming et al disclose:

- Reciprocating piston pump (90), in figure 5.

Chine et al disclose:

- Pumps (34,36) simultaneously pumping materials to an applicator (53) without passing through another pump ,in figure 1 ,a controller (14) with provision for a user-selectable (using item 20) pressure set point (column 17,lines 30-34), controller (14) continually comparing first and second pressures and providing an alarm in the event one of pressures falls to a predetermined percentage of set point, in figures 1, 28 and column 17,lines 31-33 and column 18 lines 5-7.

## **(10) Response to Argument**

### **Ground 1:**

On page 5 paragraph 1 ,Appellants argued that Senf discloses a gear type pump and therefore can not be considered as positive displacement pump. In paragraph 2 of the same page Appellants argued that Cline's system does not show the step of comparing or monitoring the higher of the two pressures.

### **Responding to Appellants' argument:**

Appellants' invention is directed to a plural component material dispensing device comprising two reciprocating pumps wherein the two pumps are the only pumps between the material source and corresponding output from each pump. The two

pumps simultaneously pump the materials and without passing through another pump the pumped materials are directly sent to an applicator such as spray gun. Appellants' device further comprises a controller which monitors the first and second output pressures from the first and second pump respectively and regulates the higher of these two pressures to a user selectable pressure set point. Appellants argued that Senf's disclosure is related to a gear type pump which is different from reciprocating type pumps. Examiner respectfully disagrees.

Senf discloses a multiple (plural component) fluid dispensing system as shown in figure 4 and also as clearly stated in column 3, lines 21-25 and lines 50-54. In the background of the invention discussed in column 1, lines 11-37 Senf also stated that his invention is directed to an improvement over prior art pumps and that one class of pumps being used is positive displacement pump. Most importantly in column 3, lines 50-51 Senf unambiguously indicated that the pumps are displacement pumps and in column 3, lines 43-49 discussed that the pumps are driven by a gear mechanism. As known in the art positive displacement pumps are classified in to two sub groups ;namely reciprocating piston type and progressive pump types (such as gear pumps). Therefore Senf' disclosure of displacement pump encompasses both reciprocating and progressive type pumps. In regards to Appellants' argument that Cline's system does not show the step of comparing or monitoring the higher of the two pressures please refer to Cline's specification column 17, lines 30-36 and column 20 lines 8-13 which in a very clear manner stated that the plural component dispensing mechanism has a controller that keeps track of the pressures from both pumps and

compares the set point to either one or both of the pressure readings .It would then be apparent that if comparison is made to both pressure readings, only one transducer will have a higher pressure reading at any given time that can be compared to the set point. The only exception being if at an instantaneous time both indicators have the same pressure readings in which case that reading will be the only high pressure that will be compared to the set point.

**Ground 2:**

On page 6 paragraph 4 Appellants argued that Hayes' materials are not considered plural component materials as ordinarily understood by one skilled in the art. Appellants asserted that plural component materials have 2 or more components that chemically react with one another. Further Appellants argued that Hayes' connects the outlet 39 of the pump 41 to the inlet 29 of another pump 23 and therefore can not meet appellants' claim limitation that requires only a single pump be present between the material source and the output. On page 6 paragraph 2 Appellants also argued that Flemming requires stepper motor and therefore no pressure control is required.

**Responding to Appellants' argument:**

Hayes also disclose similar proportioning system comprising two pumps that are intended to pump liquid concentrate and diluent. In column 2 lines 13-15 ,for example ,Hayes stated that the liquid dilution may consist of **any liquid** for being mixed with the specific liquid concentrate. Therefore even if assuming *arguendo* that Appellants' definition of "plural component material" is correct it is clear that out of many diluents and the corresponding concentrate chemical there will be infinitely possible

combinations and therefore chemical reaction is evidently involved .Therefore the not only by virtue of the fact that there are at least two material components but also due to the fact that the diluents can be liquid chemicals, Hayes system is rightly considered as a plural component pumping device. In addition please note that It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. ***Ex parte Masham, 2 USPQ2d 1647 (1987)***. Hayes structure is capable of dispensing plural component materials that can react chemically.

Appellants argued that Hayes' connects the outlet 39 of the pump 41 to the inlet 29 of another pump 23 and therefore can not meet appellants' claim limitation that requires only a single pump be present between the material source and the output is incorrect. Appellants' claim ,however only recites first and second pumps being the only pumps between the material source and outputs". This does not preclude attaching another device on the fluid line. As shown in figure 1 of Hayes conduit 39 is attached to conduit 29 but there is no pump between pump 23 and material source 15. Actually in column 2, lines 36-39 Hayes stated that the connection between item 19 and pump 23 can be made in any manner apparent to those skilled in the art. Appellants' argument that Flemming requires stepper motor and therefore no pressure control is required is invalid and a misunderstanding of the office action. Examiner has used Flemming for its teaching of the use of piston pumps in dispensing apparatus. The reference was not used to support any other obviousness

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rejection such as the use of pressure controller as alleged. The controller and pressure regulation mechanism is taught by Cline et al as clearly pointed out in the office action.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

/Amene S Bayou/

Examiner, Art Unit 3746

Conferees:

/Devon C Kramer/

Supervisory Patent Examiner, Art Unit 3746

/Thomas E. Denion/

Supervisory Patent Examiner, Art Unit 3748